tion is at present available. Of the ninety signals displayed at stations in the United States, twenty-three are classed as late, the orders having been issued immediately on the reception of the news of unexpected strong winds; other twenty-three are reported by the observers as not verified at the station, but of these twelve appear to have been verified within one hundred miles thereof, leaving fifty-six signals or sixty-two per cent. verified. Three cases are reported in which dangerous winds prevailed for a short time without the display of signals.

BAROMETRIC PRESSURE.

The isobars given on Map No. 2 show that the area of high pressure on the Pacific Ocean has, as usual, as shown by the charts published by the British Admiralty, encroached upon the coast of California; on the other hand, the area of high barometer over the Atlantic Ocean has apparently extended somewhat further eastward than usual. The lowest pressure is found on Lake Superior in apparent contradiction to the generalizations deduced by Mr. Buchan from his isobaric charts for the world.

TEMPERATURE.

The temperature during this month has been about the average of many years past, the most decided departure being in Minnesota, Wyoming and Colorado. On the 24th, in the latter Territories, the thermometer indicated the lowest temperature ever recorded there, it being —24° at Cheyenne, —17° at Colorado Springs, —9 at Denver and 0 at Santa Fe.

The isothermal lines for the month are given on Map No. 2. In drawing these, some use has been made of the observations made by the corps of voluntary observers reporting to the Signal Office.

The southeastern side of a region of cold air and high barometer, generally presents cases of extreme contrasts of temperature, and such have been quite frequent during this month. The most remarkable instance was noted on the afternoon of February 22d, and it is worthy of special attention, since similar cases have occured but three or four times during the last three years. On the date in question a line drawn northward through Louisiana to Vicksburg, thence northeast to Baltimore and thence southeast to the Atlantic coast, separated the area of cold northeast winds and rain on the northward from that of warm southwest winds to the southward. This belt of great thermal contrasts had existed on the 20th, and extended slowly eastward until the 23d.

The greatest contrast recorded is found in the Middle Atlantic States, although probably parallel cases occurred at other places, where the Signal Office has no stations. At New York the temperature of 41°, with northeast winds is first recorded on the 21st at 7.35 A. M., and continued uniformly until the 23d 7.35 A. M. At Philadelphia there were northeast winds, temperature 44° on the 22d 7.35 A. M., and continuing uniformly until the 23d 7.35 A. M.; at Baltimore, northeast winds, temperature 58° on the 22d 11 P. M., this is the only northeast wind reported at Baltimore. During the three days in question Baltimore, as also always Washington, experienced only warm southwest winds.

On the 21*st*, 4.35 *P. M.*	*On the* 22*d*, 4.35 *P. M.*	*On the* 23, 7.35 *A. M.*
New York, wind E, temp. 51°.	Philadelphia, wind, NE, temp. 47°.	Philadelphia, wind, E, temp. 41°.
Philadelphia, wind SW, temp. 67°.	Baltimore, wind SW, temp. 73°.	Baltimore, wind, SW., temp. 62°.

It thus appears that at these stations, as also along the entire belt from Louisiana to New Jersey, cold north and east winds met, and perhaps, to a slight extent, underrun the warm south and west winds, the contest between the two being maintained with great uniformity for 48 hours. The examination of the movement of the upper clouds, as far as they could be observed when the belt was most distinctly marked on the afternoon of the 22nd, shows that while the crowded isothermal lines bounded the regions of north and south surface winds, they also bounded the regions, respectively, of the northeast and southwest upper currents, into which directions the surface winds were respectively turned after their ascension. The heaviest rain seems to have been falling on the north side of the dividing belt at the time of each report. As has been mentioned in the study of the Storm No. XI, this belt of isotherms disappeared on the development of that storm-centre.

PRECIPITATION.

The monthly chart of precipitation shows that there has been a very great excess in the South Atlantic States, and a decided excess in the Western Gulf States and the Ohio valley. In compiling this chart use has been made of the reports of voluntary observers, in addition to those of the Signal Corps.

On the 21st and 22d, at Nashville, there fell 5.96 inches in 36 hours, being the heaviest rainfall ever recorded there.

RIVERS.

The Missouri river at the end of the month was at about the same height as at the beginning, both at Leavenworth and at St. Louis, having in the interval risen and again fallen from one to three feet. The Ohio fell, with but slight interruption, until the 13th of the month, when a sudden rise of about eight feet occurred in the upper portion of the river, producing by the 20th a rise of fifteen feet at Cincinnati. The extensive rain of the 23d and 24th, throughout the Ohio valley, caused a very general rise, which was especially marked at Nashville. At the close of the month the river stood at Cincinnati, Louisville and Cairo from eight to twelve feet above its position at the middle of the month. The Upper Mississippi has varied but slightly, and at the close of the month averaged about one foot lower than at the beginning; below St. Louis it has varied considerably, and at Cairo, Memphis and Vicksburg closed from four to six feet higher than at the beginning of the month. The wave of high water, which, on the 28th, was passing Cairo and Memphis, had not at that time reached Vicksburg.

ICE IN RIVERS, &C.

During the month the ice has averaged sixteen inches in thickness at Dubuque, and twenty-one and three-quarters at La Crosse. At Keokuk the river was clear of ice on the 11th and 27th, but full of thin ice at the other days of observations. At Detroit on the 12th the river was almost free of ice. At Toledo the ice broke up on the 15th. At Buffalo the river and lake continued frozen during the month. At Rochester at the beginning of the month the ice was from six to eight inches thick, and at the close from twelve to eighteen inches